

Lady Katherine Leveson Church of England Primary School

Policy for Mathematics

Executive Summary

Purpose:

To provide a clear structure for the teaching of Mathematics

Rationale:

To ensure a consistency of approach to teaching and learning and the raising of standards across the school

Key Principles

A comprehensive, concise policy gives a clear and consistent structure to the teaching and learning of Mathematics during the children's journey through school.

Actions / Aims:

We aim to provide pupils with the abilities and inclination to use and apply the mathematics skills they have learned to solve problems in number, shape, space, measures and handling data. We aim to enthuse our children with a positive attitude, towards Mathematics and an awareness of the fascinating, aesthetic and creative aspects of the subject.

Activities are carefully planned to encourage the full and active participation of all pupils, irrespective of ability, through tasks and questioning differentiated to the pupils' abilities and with consideration of their different learning styles.

Assessment, both summative, (for example, tests) and formative (ongoing teacher assessment, gained through observation and marking) plays an integral part in planning for Mathematics. Half termly tracking informs class groupings, while ongoing marking ensures children maintain their confidence and are aware of their next steps, which are clearly pointed out for them at the end of their work. Children are involved in the setting of their own, rigorous, but realistic targets on a regular basis. The FKS complete the Foundation profile as an ongoing assessment.

Monitoring and Evaluation:

The implementation of this policy is monitored by the Mathematics Subject Leader
The school staff is responsible for the execution and evaluation of this policy
The Governors are responsible for the evaluation of the impact of this policy

Further relevant documentation:

Marking policy
ARR policy
SEN policy
FKS policy
G&T policy

Homework policy
Learning environment documentation
Presentation policy
Equal opportunities policy

Introduction:

This policy outlines the purpose, nature and management of the mathematics taught and learned in this school.

This policy has been developed through consultation with, and is the responsibility of, all who participate in this school, including, governors, staff, parents and children. The policy has been read and commented on by representatives of each of these parties, including School Council.

What is Mathematics?

Mathematics is not just a collection of skills, it is a way of thinking. It lies at the core of scientific understanding, and of rational and logical argument.

*Dr. C Sparrow, University of
Cambridge*

Maths is the study of patterns, abstracted from the world around us- so anything we learn in maths has literally thousands of applications, in arts, sciences, finance, health and leisure

*Professor R. Lawrence,
University of Michigan*

Principles of Mathematics

Mathematics, as a subject, enters into all avenues of everyday life and its importance for the development of the whole child cannot, therefore, be overstated.

Mathematics aims to provide pupils with the abilities, confidence and enthusiasm to become independent learners, able to use and apply skills they have learned to tackle and solve problems across the curriculum and throughout their lives. They have the opportunity to apply their knowledge in practical and intellectual tasks, when faced with daily life problems and within Mathematics itself. Pupils are provided with opportunities and skills to appreciate mathematical pattern and relationships within maths. An understanding of mathematical vocabulary, is an essential component of learning, enabling communication within the subject, and hence children should be afforded the time and opportunity to discuss their mathematical thinking and develop their use of this vocabulary.

Lady Katherine Leveson CE Primary school strives for every pupil to develop a positive attitude towards mathematics and an awareness of the fascinating, aesthetic and creative aspects of the subject. Mathematics provides the opportunity to develop logical thinking, independence of mind and the necessary skills and processes on which to build later study. We understand, as a staff, that mathematical skills are integral to all other areas of the curriculum and has to be taught in context in order to be fully effective.

In FKS children are continuously exposed to mathematics. They are encouraged to use their mathematical skills across the curriculum, for example, through singing number songs and rhymes, role play in shops, building games and in the home environment. They also learn in more formal groupings. In Key Stage 1 and 2 all pupils have a daily mathematics lesson of between forty-five minutes and one hour. The lesson structure follows that recommended by the Renewed Framework, approximately 10 minutes mental/oral work, 30-40minutes main teaching activity and 10 minutes plenary. The plenary session is carefully planned to give pupils the opportunity to review their work, link it to further work and for the discussion of the children's thinking processes and mathematical concepts.

All teachers should use the medium term plan which is the synopsis of the objectives relevant to each unit. Short term planning follows the structure that has been decided upon by the staff. All planning is for the benefit of the children's learning, gives a structure for teaching staff to work to and informs the Head teacher and Strategic Leadership team of curriculum coverage.

Whilst pupils are taught in mixed ability class groups, they are often grouped within the lesson according to ability. Within Upper Key Stage 2, the children are grouped according to ability across the year groups.

Some children's learning will be considered either above or below average. There are a number of intervention strategies available for such children, including, small group work and teacher focus groups. Our children also benefit from a number of trips and visits to other schools to experience additional learning opportunities. Learning for children with special educational needs is addressed through their IEPs (Individual Education Plans)

More able children are catered for through differentiation within their teaching groups, being given the opportunity to explore mathematical concepts further. In addition, children in Years 4-6 who show exceptional ability are withdrawn on a regular basis, to have special mathematical lessons, with a visiting teacher. Test results and teacher assessment are used for selection purposes. Topics are geared towards

levels 5 & 6 of the programme of study. Lessons also include activities in logical and lateral thinking and reasoning.

The programme of study set out in the National Curriculum forms the content of the school mathematics curriculum in Key Stages 1 and 2. The FKS Curriculum Guidance and the National Curriculum form the basis of the mathematics taught in the FKS.

Work in mathematics follows the whole school policy on equal opportunities. Lessons should be planned with activities to appeal to gender, all races, religions, cultures, abilities and learning styles.

Resources

Children of all ages need practical, concrete, learning experiences to aid their abstract thinking and concept formation. It is, therefore, important that there are enough resources available for the teacher to provide these experiences.

Resources are available to pupils as appropriate. Each classroom displays a number line (1-100), 100 square and mathematical vocabulary relevant to the topic being taught. Each classroom also has a supply of the following: counters, dice, multilink, rulers, number cards, place value cards. In addition to these resources, there is a central mathematics resources area, from where a wide range of resources can be borrowed. There are a number of computer programmes available to the children, as well as the use of an interactive white board in each classroom. A range of different published schemes are used to aid the delivery of the National Curriculum. Teaching should take full account of the different types of resources. Both staff and children are encouraged to use the appropriate resources for a particular activity. It is also intended that there should be a balance between the various kinds of resources without there being an over dependence on any one in particular e.g. books or worksheets.

Pupils records of their work

The purposes for which pupils record and present their work include:

- to help in clarifying their own thinking
- to act as a note for future reference
- to communicate with others
- to provide evidence of their work in mathematics
- to organise their ideas, materials and presentation
- making cross-curricula links

No one type of record is suitable for all these purposes, so recording should take different forms depending on the nature of the activity and the purpose of the record.

Recording can be:

- symbolic
- graphical
- diagrammatic
- pictorial
- written
- constructed (e.g. a model)
- verbal

Pupils will mainly record their work as a:

- written record either:
 - in their mathematics books
 - on a published or prepared worksheet (stuck into their books)
 - on paper e.g. graph paper, computer printout
- visual record:
 - construction, which may be photographed
- verbal record:
 - through discussion with the teacher, who may make a written comment based on assessment of what the child said or did.

The school follows the SIAS guidelines “Routes through calculations” when teaching the different methods of computation. Children are expected to present their work in the standard format agreed by staff, and encouraged to make jottings as they feel appropriate.

Roles and responsibilities:

Teacher’s role:

It is the responsibility of all teaching staff to ensure that all pupils have access to the content of the programmes of study for mathematics at an appropriate level. This entitlement is guided by the Renewed Framework for Mathematics which ensures an even coverage of all areas of the curriculum.

Staff will be advised of appropriate training for their needs, where it is identified to be necessary. It is staff members responsibility to highlight their training needs through the Performance management process.

The management of the mathematics teaching resources is the responsibility of the mathematics subject leader, whilst it is the responsibility of all staff to ensure that resources are returned in a safe and useable condition to the central mathematics area.

Parent/carer’s role:

The importance of linking mathematical learning with home is apparent. All pupils are set one piece of mathematical homework each week and there is an understanding that parents will undertake mental mathematics with their children on a regular basis. Parents are invited in frequently to sample lessons and new FKS parents are encouraged to visit our Parents’ workshop. In addition to this, our on-site Children’s Centre also offers some Numeracy training for parents.

School Self Evaluation:

It is the responsibility of all teaching staff to monitor, assess and report on the progress of all pupils to whom they teach mathematics. Formative (ongoing) and summative(cumulative) assessments take place throughout the school year and the progress of pupils is reported to parents each term.

Marking of the children's books should be undertaken regularly and always before the children see their work again. This marking informs an individual's mathematics target, which will be discussed between the pupil and teacher on a regular basis. Marking will also form part of a termly teacher assessment level, which will be supported by a termly level ascertained through more formal testing, appropriate to the year group. These levels are monitored, not just against the child's progress over the year, but also against their whole school journey. When children appear to be "off track", the class teacher and subject leader will decide on a strategy to aid that child's learning. The subject leader, in conjunction with the Strategic Leadership team, will analyse these results, as appropriate, looking for areas for improvement across the school and for children who need targeted help in specific areas. Teaching staff should then give these children extra support within lessons, and where appropriate, additional intervention may be put in place. Records are kept regarding children's progress against the taught objectives, which will form the basis of future medium term planning.

Monitoring and evaluation of the teaching of mathematics is undertaken through the school's self evaluation process, which will be in evidence at least, termly. Feed back will be given to individual staff and issues arising will be discussed by the Strategic Leadership team. External training of staff should be put in place as appropriate and Mathematics staff meetings held when considered appropriate.

Guidance for Parents/Carers:

Parent's have an opportunity to discuss their children's mathematics progress and see their work at Parent's evenings, held each term. In the Summer term, they will receive a written report and have the opportunity to discuss this at a Parent's evening. In KS1 and KS2, the report includes the National Curriculum level achieved by the child in end of year tests. In addition, parents may visit the class teacher or learning support teacher to discuss their child's mathematics at any mutually convenient time.

This policy will be reviewed on an annual basis, in the light of new initiatives developed both within the school and the wider community, including government intervention.

Solihull Inspection and Advisory Service provided guidance during the drafting of this policy. It is the aim of the school that the subject leader or a representative of the school be present at the termly mathematics subject leaders' conference.

Sue Thomas
Mathematics Subject Leader
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